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## **The Epistemology of Essence**

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### **ABSTRACT**

The epistemology of essence is a topic that has received relatively little attention, although there are signs that this is changing. The lack of literature engaging directly with the topic is probably partly due to the mystery surrounding the notion of essence itself, and partly due to the sheer difficulty of developing a plausible epistemology. The need for such an account is clear especially for those, like E.J. Lowe, who are committed to a broadly Aristotelian conception of essence, whereby essence plays an important theoretical role. In this chapter, our epistemic access to essence is examined in terms of the *a posteriori* vs. *a priori* distinction. The two main accounts to be contrasted are those of David S. Oderberg and E.J. Lowe.

## 1. Defining the notion of essence

The notion of essence is notoriously mysterious: philosophers seem to use it in a number of different senses, and even if they *do* use the notion in the same sense, it is often not quite clear what that sense is. At the same time, essences, when they are invoked, are generally supposed to do a lot of explanatory work: natural kinds can be identified in terms of their essences, metaphysical modality may be reduced to essence,<sup>1</sup> the causal powers of various entities can be explained with the help of essences, and so on. In what follows, I will first attempt to offer a working definition of the notion and will then lay out the available options regarding the epistemology of essence. Following these introductory remarks, I will proceed to analyse the options.

As E.J. Lowe often puts it, perhaps the closest thing to a definition of essence that we may have is the familiar phrase from Locke: ‘the very being of any thing, whereby it is what it is’ (1975: III, III, §15). But this phrase is not particularly informative. What exactly is ‘the very being’ of a thing, and how is it that we come to know ‘the very being’ of things? Locke himself considered *real* essences (as opposed to merely *nominal* essences) to be unknowable to us, but in contemporary metaphysics, a modal interpretation of essence due to the work of Kripke and Putnam has been the standard.<sup>2</sup> In the tradition of ‘Kripke-Putnam essentialism’, essences are explained in terms of *de re* modality: an attribution of necessity to a proposition is *de dicto*, but when we attribute necessity to an object we are dealing with *de re* necessity, and hence essence.<sup>3</sup> Another feature of the Kripke-Putnam tradition is that it is commonly

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<sup>1</sup> Following Kit Fine (1994), more on this below.

<sup>2</sup> See Lowe (2011a) for an illuminating discussion of Locke’s views on essence, and for a comparison of Locke’s account with the Kripke-Putnam line.

<sup>3</sup> I should note that by ‘Kripke-Putnam essentialism’ I refer mainly to the work of those philosophers who are

thought that science discovers essences; that is, essences are discovered (at least for the most part) *a posteriori*, empirically. The apparent problem with this approach is that ‘little, if anything, is known about how or why objects have their *de re* modal properties’, as L.A. Paul (2006: 335) puts it. Accordingly, the epistemic problem has been merely postponed. This is certainly a pressing problem at least for those who consider the possession of *de re* modal properties to be primitive.<sup>4</sup>

Before we proceed any further, it should be made clear that the understanding of essence to be adopted in this paper is not the one familiar from the Kripke-Putnam tradition, which represents what we might call the ‘modalist’ view of essence: an object has a property essentially if and only if it has that property necessarily. The alternative, broadly Aristotelian approach has been made popular by Kit Fine (1994, 1995a, 1995b) and E.J. Lowe (e.g., 2006, 2007, 2008a, 2011a). Other contemporary proponents of a broadly Aristotelian conception of essence include, for instance, David S. Oderberg (2007, 2011) and Kathrin Koslicki (e.g., 2012).<sup>5</sup> This broadly Aristotelian view of essence – which I do not claim to be entirely faithful to Aristotle – suggests that not all necessary truths about a given entity *x* are essential truths

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broadly sympathetic to the idea that there are mind-independent (natural kind) essences and that they can be interpreted in terms of *de re* modal properties. My remarks should not be understood as exegetical; in fact, Putnam (1990) has distanced himself from this line of thought altogether, and it is not entirely clear what Kripke’s own position is. For further discussion of these issues, see Tahko (2015a).

<sup>4</sup> Paul (2004) develops an account of *de re* modal properties in terms of bundle theory, but if this means that essences are to be conceived as bundles of properties, then this view as well has its problems, as Oderberg (2007, 2011) has argued. These issues will be examined in detail in what follows.

<sup>5</sup> Scott Shalkowski’s work (e.g., 1997, 2004) in defence of and developing on a Finean conception of essence and modality should be mentioned in this connection as well, as should Fabrice Correia’s (e.g., 2011). There are, of course, many others who have developed relevant accounts, such as Crawford Elder (2004), but it will not be possible to discuss all of them here. My focus will be on Lowe, for obvious reasons.

about  $x$ , but all necessary truths are true in virtue of (or, one might say, *grounded in*) essential truths (about some entity or other). This implies that essential truths about  $x$  are a proper subset of the necessary truths about  $x$ , but even those necessary truths about  $x$  that are not essential truths *about*  $x$  are nevertheless essential truths about some entity or other. So, according to this view, essence is ontologically prior to modality in the sense that essential truths are more fundamental than modal truths. On this view we should not reduce essence to *de re* modal properties.<sup>6</sup>

Lowe sometimes refers to his own, broadly Aristotelian view of essence as ‘serious essentialism’ (e.g., Lowe 2013: 144). But as we saw, Lowe in fact takes his inspiration from Locke, suggesting simply that the essence of  $x$  is just the very *identity* of  $x$ . Moreover, it is important for Lowe that essences are not themselves further entities (in contrast to Locke). Since he takes it that all entities have an essence, there would seem to be a threat of infinite regress if essences themselves were entities. Indeed, why would we think that the *identity* of a thing would itself be an entity? More precisely, the conception of essence at hand suggests that once we know the identity and existence conditions of an entity, we know its essence; we may *express* this essence in terms of a set of these identity and existence conditions, or in terms of a proposition listing these conditions, but the essence itself is not a set or a proposition. I believe that this comes close to Lowe’s view of the matter, but things are somewhat less clear with other broadly Aristotelian versions of essentialism, such as Kit Fine’s, who sometimes writes as if essences themselves *are* propositions: ‘we may identify the being or essence of  $x$  with the collection of propositions that are true in virtue of its identity’

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<sup>6</sup> As Shalkowski (2008: 51) puts it, ‘*de dicto* necessity is a species of *de re* necessity’, and hence the former is ‘not free from essentialist implications.’ For more critical remarks regarding the traditional approach, see Lowe 2013: Ch. 8.

(Fine 1995c: 275). I will leave this issue aside, interesting as it is – in what follows it is assumed that essences are not themselves entities.

Finally, the distinction between *general* and *individual* essences should be mentioned; or in other words, the distinction between *kind* essences and *particular* essences. This is an important distinction for Lowe (2013: 145), although personally I am somewhat sceptical about individual essences, such as the essence of an individual cat. General essences such as the essence of the kind ‘cat’ will be my main focus – although there may be reasons to be sceptical about some general essences as well, such as those of biological species.<sup>7</sup> Let that pass for now. General essences are nevertheless somewhat less controversial than individual essences. Indeed, in a classic paper, Baruch Brody (1973) considers it an advantage of ‘Aristotelian essentialism’ that it connects essentiality with what it is to be a natural kind. It follows that essences of artificial objects, such as tables and chairs, are also among the more controversial cases – I will largely omit discussion of them.

Typically, we think of our epistemic access to essence (and also modality) in terms of the *a priori* vs. *a posteriori* distinction, although I should immediately note that I consider this distinction to be somewhat vague.<sup>8</sup> It should also be noted that even though essence and modality are undoubtedly linked in an important way, the initial assumption of this article is, following Lowe, that essence is *ontologically* and *epistemically* prior to modality. In what follows I will examine the *a priori* and the *a posteriori* routes to essentialist knowledge,

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<sup>7</sup> Defenders of biological essentialism are few and far between, but see for instance Austin (forthcoming) for a recent account.

<sup>8</sup> See Tahko (2017) for discussion. See also Vaidya (2015) for a helpful classification of different approaches to modal epistemology. Vaidya also discusses, e.g., Bob Hale’s essentialist view, which I will not attempt to cover in this article.

before concluding with a brief discussion of a hybrid view, where each method is acknowledged. I am presently more interested in mapping our options regarding the epistemology of essence as well as clarifying Lowe's view rather than defending a particular position. Another preliminary point worth noting is that in my analysis I will first explore the possibility of a unitary view of the epistemology of essence, even though I am doubtful that our epistemic access to essence is always via the same route (which leads to the hybrid view). However, for the sake of parsimony, a unitary account would be preferable, so I think that hybrid accounts should be considered only if all unitary accounts fail.

## 2. Epistemic access to essence

Given that essence is understood to be ontologically prior to modality, it may, at least initially, seem more promising to give an account of the epistemology of essence independently of the epistemology of modality. This would imply that the epistemology of modality is a special case of the epistemology of essence. Hence, if we could give a plausible account of the epistemology of essence, we would also have the beginnings of an account of the epistemology of modality. Although explicit defences of this idea are relatively rare, it seems that this is a popular route for contemporary essentialists.<sup>9</sup> However, there is certainly less agreement about whether our knowledge of essence is *a priori* or *a posteriori*. I will consider

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<sup>9</sup> In discussion, both Kit Fine and E.J. Lowe have indicated to me that this option is more attractive to them. In Lowe's case this is also clear from his written work. Note however that nothing here entails *conceptual* reductionism about modality, i.e., the *concept* of modality is not necessarily analyzable in terms of the concept of essence, even if the former does reduce to the latter on an ontological level, and even if essence is epistemically prior to modality. So, an understanding of the concept of modality may not be available simply via an understanding of the concept of essence. This is something that Lowe has stressed in discussion.

each option.

## **2.1 *A posteriori* access to essence**

One of the supposed advantages of Kripke-Putnam essentialism is that our knowledge of essence, or essential properties, can be traced to scientific knowledge in a seemingly straightforward manner. Indeed, many contemporary essentialists continue to support this type of approach; it is familiar from the literature on ‘scientific’ or ‘dispositional’ essentialism (e.g., Ellis 2001, Bird 2007a). However, since the conception of essence taken for granted in much of this literature is that essence reduces to modality (rather than the other way around), it is not obvious that scientific essentialism is able to give us a sufficiently fine-grained account of the epistemology of essence understood in a broadly Aristotelian manner.<sup>10</sup> A typical conviction of the scientific essentialist is that the laws of nature are metaphysically necessary, in which case our knowledge of the laws of nature is a direct route to substantial modal knowledge, with empirical science playing a key role. But while this conception may bear some resemblance to Aristotelian essentialism, it neglects a key feature of the Aristotelian ontology of essence, namely that essence is ontologically prior to modality.

Can we build on the work of scientific essentialists while adopting the Aristotelian ontology of essence? Oderberg’s essentialism is perhaps the most interesting attempt at this.<sup>11</sup> However, Oderberg (2007: 13) thinks, contrary to some versions of the Kripke-Putnam line and scientific essentialism, that discovering essences is not just the work of scientists. He would nevertheless insist that essentialism is a fallibilist position, that is, our knowledge of essence is subject to revision (ibid., 48). Crucial to this line of thought is that although

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<sup>10</sup> See Lowe (2006: ch. 9–10) for discussion and criticism of scientific essentialism.

<sup>11</sup> Regarding laws of nature in particular, see Oderberg’s contribution to this volume.



scientists play an important role in the discovery of essences, we cannot simply rely on experts to explain the epistemology of essence. Oderberg (ibid., 13) argues, like Lowe, that *everyone* can have knowledge of essences. It is first and foremost the metaphysician's task to explain essence, but scientific knowledge is indispensable for this task. So, Oderberg's essentialism is of the *a posteriori* kind – and probably the best example of this approach combined with an Aristotelian ontology of essence. I will devote the rest of section 2.1 to a discussion of Oderberg's account.

### 2.1.1 Oderberg's essentialism

Oderberg insists that no direct empirical test could enable us to discover essences, even though essences are tracked by the empirical sciences – the account is fallibilist. It also seems clear that Oderberg holds essence to be epistemically prior to modality. In particular, it is important for Oderberg that the essence of an object is not merely a bundle of the essential properties of that object. His main reason for resisting this type of 'bundle theory' is what he calls 'the unity problem', namely, there should be something to hold a bundle of essential properties together in order to ensure that, say, the essential properties of a given kind are always featured in the members of that kind (Oderberg 2011: 90). The unity problem, sometimes also called 'the problem of complex essences' (Dummsday 2010), will turn out to be of great importance for the epistemology of essence. In fact, the problem goes back to the Aristotelian problem of *propria*. Here is a passage from Oderberg with a relevant example:

Having a capacity for humour is an essential property [...] of human beings, and in this sense we can say it flows *from the essence* of human beings to have a capacity for humour. But the *essence* of being human is to be a *rational animal*, and humans have a capacity for humour *only because*

they are rational animals. (Oderberg 2007: 49.)

This seems correct insofar as we need to distinguish between the *essence* of an entity and what that essence may entail (ignoring any problems with this particular example). But I do not regard the term ‘flow’ to be ideal. It is a historical notion, used by Locke, which Oderberg adopts into contemporary discussion for want of a better notion. Does the notion of flow simply suggest that the essential properties of an entity are logically entailed by the essence of that entity? If this is the case, then a distinction that Fine (1995b: 56–58) draws between *constitutive* and *consequential* essence may be relevant here: a property is a constitutive part of the essence of a given object if it is ‘directly definitive’ of the object, and merely consequential if it is had in virtue of being a logical consequence of some ‘more basic’ essential property of the object. However, the ‘basic’ essential properties of objects entail all sorts of things and not all of these seem like very plausible essential properties, e.g., the constitutive essential properties of humans entail any disjunction of an essential and a non-essential property of humans, such as humans having a capacity for humour *or* flying.<sup>12</sup> Oderberg is determined to settle this problem, but not in terms of entailment. Rather, he gives a more rigorous definition of ‘flow’: a set of properties of the objects belonging to a given kind with a particular essence are caused by and originate in the form of that kind (Oderberg 2011: 99–103). The idea is that *form* – a notion which is central to Aristotelian hylomorphic essentialism (which Oderberg is developing) – provides the essence and hence the properties that ‘flow’ from it.

As I understand it, then, ‘flow’ concerns the dependence between a set of essential properties and the essence which they are a part of. A concern regarding this solution is that it

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<sup>12</sup> See Gorman (2005), Koslicki (2012), and Correia (2011) for further discussion and some suggested solutions to the problems caused by the constitutive/consequential distinction.

seems impossible for us to distinguish, epistemically, between the essence itself and an essential property that ‘flows’ from the essence. For instance, if we are looking for the essence of water, we might be able to point out a number of properties that seem essential but fail to be so. One example might be the diffraction of water waves. Diffraction, the bending of waves around obstacles, is a feature of any wave, but it will of course only be apparent when we have a body of water rather than just one water molecule. So, is diffraction a property of the water molecule or something that merely flows from the essence of water? One might think that the solution to this problem – how to distinguish essential properties from mere *propria*, properties that flow from the essence – could be addressed in the same way that we can distinguish essential properties from merely accidental properties. Oderberg is aware of this type of challenge and attempts to address each of these issues.

Regarding the problem of genuine essential properties and mere accidents, Oderberg suggests that we can use our reason and common sense to determine when a given property is genuine in the sense that it is caused by and originates in the essence. Crucial for this process is to consider whether the thing in question, say, the kind ‘water’, would continue to display ‘the characteristic properties, functions, operations and behaviour’ that it normally does even if a certain quality of it were to be removed (Oderberg 2007: 50–51). If this is the case, then the quality in question is not a part of the essence of the thing. But if removing the quality would cause ‘a general disturbance or radical change’ in the said functions of the thing, then it is a part of the thing’s essence (*ibid.*).<sup>13</sup> However, on Oderberg’s position, it might seem that

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<sup>13</sup> It is not entirely clear what counts as a general disturbance of the type that Oderberg has in mind. One might suggest that, say, in the case of water, these disturbances would include changes in the *microphysical* behaviour of water molecules. Yet, Needham (2011) and Lowe (2011a) have argued that the *macrophysical* properties of water are more plausible defining characteristics. For discussion, see Tahko 2015a. This issue is of course crucial for the previous example, because diffraction is a macrophysical phenomenon.

we have only our imagination to rely on to determine whether a given change is of the first or the second type. These issues prompt Oderberg to recognize an epistemological caveat concerning essence. Essential properties, including the ones that ‘flow’ from the essence, are presumably open to empirical research (given sufficient technical resources etc.). But since essences are not mere bundles of essential properties, we need something that unifies these properties to get to the essence – this role is played by the Aristotelian notion of *form*. Here is where Oderberg as well needs *a priori* input, because he thinks that the existence of such a unifier can only be deduced by metaphysical *a priori* reasoning, even though determining what the unifier is will require empirical investigation. As Oderberg (2011: 97) puts it: ‘That gold must have a principle of unity is not within the remit of observation; that gold is a metal whose atomic constituents have atomic number 79 is’. This highlights the importance of the unity problem: *a priori* elements appear to be unavoidable in determining when a collection of essential properties constitutes an essence.

### **2.1.2 *A priori* elements in *a posteriori* essentialism?**

The problem that seems to be emerging for the *a posteriori* route to essence is that we must already have grasped the essence we are looking for before we can identify the essential properties that ‘flow’ from it. It seems that our epistemic access to essence is often piecemeal: we wonder if a certain kind of entity, say, a certain subatomic particle, could possibly exist. We determine this by considering the essential properties that the particle would have, were it to exist: perhaps its mass etc. But, as we saw, it would appear that we can grasp an essence only *after* we have acquired sufficient knowledge about the essential properties associated with that essence. Or, to put it another way, we must have some prior conception of the essence of an object before we can recognize that it acts as a unifier for a given set of essential

properties. If we need something like this in any case, then perhaps an account which takes us to have *a priori* access to essence would be better off to begin with?

Oderberg's reply to this type of concern is that all we need to know *a priori* – at least in the case of natural kinds as opposed to abstract mathematical objects – is that a given kind, say, a subatomic particle, *has an essence*, not what that essence is.<sup>14</sup> Further, we can know that a given property (such as mass, perhaps), is a good candidate for an essential property of a given kind because of things like universality in the kind, the way it characterizes the kind, and the difficulty or impossibility of removing that property from random members of the kind. It seems to me that these are indeed all good ways to identify properties that might be a part of some essence or other, but this may not remove the core of the difficulty. To know *which* kind a given essential property is associated with, some prior knowledge about the essence of that kind seems to be necessary. Consider the Higgs boson, which was finally discovered in 2012. This discovery was highly anticipated and physicists had a very good idea about the mass range of the predicted Higgs as well as its role in the Standard Model of particle physics well in advance of the discovery. But how did physicists know that the observed mass of the Higgs boson, now confirmed to be in the range of  $125.09 \pm 0.24$  GeV/c is truly part of the essence of the *Higgs* kind, rather than, say, an emergent feature of some yet to be discovered natural kind? If it had turned out that the data from the Large Hadron Collider is not attributable to the Higgs boson, but rather to some emergent feature of a further kind of thing, then could it not even have turned out that all the data was due to some merely *accidental* properties of this further kind of thing?

Perhaps all this is something that the *a posteriori* essentialist can address with the built-in fallibilism of the account, but a friend of the *a priori* approach can continue to push

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<sup>14</sup> Based on an e-mail exchange with Oderberg in 2011.

for the importance of the *a priori* task of unifying the essential properties, which already seems to presuppose an understanding of what kind of thing we are dealing with. If it is only possible to engage in an analysis about what characterizes a given kind *after* we have at least a partial understanding of what that kind *is*, that is, of the essence of the kind, then we ought to consider the possibility of acquiring this type of *a priori* knowledge about essences. Let us now see how that approach fares.

## **2.2 *A priori* access to essence**

The obvious challenge faced by any account of the epistemology of essence postulating direct *a priori* access to essence is that the cognitive faculty that enables this epistemic access calls for an explanation. There may be a temptation to take this epistemic access to be primitive. I do not consider this to be a good strategy, but there are very few attempts in the literature to provide a better explanation. However, the shortcomings of traditional Kripke-Putnam essentialism have prompted some philosophers to move towards *a priori* essentialism despite the epistemic challenge. Perhaps a negative argument is the best argument we can have? Lowe often motivates his view via such negative arguments (e.g., 2007, 2008a, 2008b, 2013), aimed towards the Kripke-Putnam type *a posteriori* essentialism of the likes of Alexander Bird.<sup>15</sup> Lowe argues that since the Kripke-Putnam inference-pattern used to deduce knowledge of individual essences is suspect, perhaps all essential truths are *a priori*. But we ought to be able to say something positive as well. Note also that Lowe himself explicitly rules out conceivability and intuitions (e.g., Lowe 2014) as a potential *a priori* route to knowledge of essence. In what follows I will reconstruct Lowe's *a priori* essentialism and

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<sup>15</sup> See also Bird 2008 and Lowe's (2008b) reply to Bird.

propose some ways to develop it further.

### 2.2.1 Lowe's essentialism

Lowe's arguments for *a priori* essentialism rely on his more general metaphysical commitment according to which, in general, 'essence precedes existence' both ontologically and epistemologically. On the epistemic side, the idea is that we can – indeed we must – generally know the essence of a thing before we can know whether that thing exists. In other words, we have to know that it is possible for a thing of a particular kind to exist before we can determine whether a thing of that kind actually exists. One of Lowe's best examples, in my view, is the case of transuranic elements: many of them were only synthesized after their *possible* existence was determined by non-empirical means. With the help of Mendeleev's periodic table, chemists have been able to predict the existence of a number of yet to be discovered elements and to give highly accurate predictions of their properties. Later on they were able to synthesize these elements and verify that they indeed had the predicted properties. The idea that Lowe proposes is that this process would not have been possible without a prior grasp of the essences of transuranic elements. In fact, Lowe (2008a: 35) thinks that we cannot even 'talk or think comprehendingly' about things whose essences we do not know.

There is something appealing about this story, and I will develop on it below, but there are some aspects that require further elaboration first. Perhaps the most pressing of these is Lowe's (2008a: 36) acknowledgement that we only need to know a *part* of a thing's essence to be able to talk or think about it. As Bird (2007b) has pointed out, this appears to leave the possibility of *a posteriori* essentialism open, since it could be that we come to know most of a thing's essence by *a posteriori* means even if we must know a part of it *a priori*. Indeed, it is

plausible that to be able to distinguish different kinds of things, and especially things like natural kinds, a considerable amount of empirical information is needed in addition to knowledge of general essentialist facts (such as chemical substances having their actual molecular composition essentially). This suggests that the Kripke-Putnam story about how we can derive knowledge of metaphysical necessities from general essentialist (*a priori*) facts with the help of particular empirical facts may have something going for it after all.

In various places, Lowe hints that *essential dependence* has a key role in our epistemic access to essences:<sup>16</sup>

Consider the following thing, for instance: the set of planets whose orbits lie within that of Jupiter. What kind of thing is that? Well, of course, it is a set, and as such an abstract entity that depends essentially for its existence and identity on the things that are its members—namely, Mercury, Venus, Earth, and Mars. Part of what it is to be a set is to be something that depends in these ways upon certain other things—the things that are its members. Someone who did not grasp that fact would not understand what a set is. (Lowe 2008a: 37.)

So, Lowe thinks that in many cases knowing how a thing is related to other things is central to our knowledge of *what* a thing is. Even in the case of sets though Lowe is careful to specify that depending essentially for its existence and identity on its members is only a *part* of what it is to be a set. In general, he seems to think that knowing the *complete* essence of a thing is not a very simple affair – perhaps almost impossible – but knowing a part of a thing’s essence is often sufficient for talking or thinking about it comprehendingly, and for being able to

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<sup>16</sup> See Tahko and Lowe 2015 for an analysis of different kinds of ontological dependence, including essential dependence. Lowe himself defines essential dependence as follows: ‘To say that X depends essentially on Y for its existence and identity is just to say that it is part of the essence of X that X exists only if Y exists and part of the essence of X that X stands in some unique relation to Y’ (Lowe 2008a: 38). See also Lowe 2013: 147.



distinguish it from other things. Let me now briefly discuss the case of sets – Lowe’s account is at its strongest when it comes to the essences of abstract objects, so sets make for a good case study. We will get back to the case of concrete objects below, in section 2.2.3.

### **2.2.2 Building on Lowe’s essentialism: the case of sets**

Let us look at sets more closely, as they provide a fairly simple yet illuminating example. On the face of it, it would appear that one can work with sets without knowing very much, if anything, about their essence. Since set theories, like ZFC, are extensional, we can derive a number of theorems without going beyond extensionality. Extensionality guarantees that two sets are equivalent if and only if they share all their members, although this does not mean that the sets were formed in the same manner. Moreover, working with sets on a purely extensional level would not seem to require a deeper comprehension of what the nature of sets is, in Lowe’s sense, so the idea that one must know the existence and identity conditions of sets before one can understand what a set is becomes less plausible. But we must be careful here, for it is one thing to prove set-theoretical theorems on a purely extensional level according to the rules of some formal system, and quite another to prove that these theorems express truths about sets. In order to establish truths *about* sets, we also need some independent reasons to think that the purely extensional system accurately models the behaviour of sets, and here it seems that some further insight into what constitutes a set may be required. Some such reasons may very well be available – plausibly this will involve the role of the axiom of extensionality in set theory. But once it is acknowledged that such reasons are needed to express truths about sets, it is once again possible to defend the idea that a previous grasp of the essence of sets may be needed before it is possible to express truths about sets (rather than about purely extensional formal systems).

A possible way to defend this idea is to build on the classic iterative conception of set (Boolos 1971). For instance, Øystein Linnebo (2010) has suggested that the set-theoretical hierarchy and the quantifiers used in set theory should be interpreted in modal terms, that is, as having an implicit modal character.<sup>17</sup> If this is correct, then it seems that the iterative conception of set cannot be purely extensional, as the implicit modal character must be explained somehow. Linnebo develops one approach towards understanding the modality involved, but we do not need to go into the details here; all that is needed for the purposes of this example is a plausible case for a need to go beyond extensionality. Thus, one line of thought that would support the need for prior understanding of sets goes roughly as follows.<sup>18</sup> Starting with the iterative conception of set we can determine a certain set-theoretical hierarchy, which has an implicit modal character. This conception captures the essence of sets, and it is only after one has this conception of set that one can recognize the theorems of ZFC, for instance, as expressing truths *about* sets, rather than just being elements of a purely extensional formal system. The most controversial part of this line of thought is perhaps the claim that the iterative conception captures the essence of sets. I will not attempt to support this claim here, but it is at least partly corroborated by the fact that many of the axioms of ZFC can be motivated by the iterative conception – this much is well documented in the literature (e.g., Boolos 1971, Parsons 1983, Yablo 2006, and Linnebo 2010).<sup>19</sup>

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<sup>17</sup> See also Parsons (1983) and Yablo (2006).

<sup>18</sup> I would like to thank Ramiro Caso for suggesting this type of line of thought to me. See also Fine (2005) for a relevant analysis of sets.

<sup>19</sup> In discussion (e-mail exchange in 2011) Oderberg has questioned the inference from our knowledge of the essence of sets to the belief that sets *exist*. I take it that in the case of abstract objects like sets, this inference is fairly straightforward: if it is part of the essence of a set that it has the very members that it has, then the *existence* of the set appears to be nothing over and above the existence of the members of that set. Of course,

### 2.2.3 Lowe's essentialism and concrete objects

The examples that we have considered so far have been fairly theoretical, such as transuranic elements and sets – the latter being of course abstract objects. But one objection that might be raised against Lowe's idea that essence precedes existence stems from more familiar everyday objects.<sup>20</sup> Consider cats for instance. If Lowe is right, then we would have to know (a part of) the essence of the kind 'cat' before we can talk or think about cats comprehendingly, or indeed to distinguish cats from other objects. Yet, it seems that we do not need to know very much at all about cats to be able to think about them, individuate them in thought, and refer to them quite comprehendingly.<sup>21</sup> Perhaps we only need to know that they are living organisms. Even if one thinks that cats are robots or demons, it would still seem to be the case that when one sees a cat one is immediately capable of thinking about it (as a cat, albeit a robot-cat or a demon-cat), and successfully referring to it in conversation. While I think that there is much more to be said about the apparent difference between familiar everyday objects and abstract

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the strategy for establishing the existence of a given object depends on what the essence of the object is, but I consider the case of sets to be among the easier cases. Things get much trickier with material, concrete objects.

<sup>20</sup> At this point it may be useful to note that our epistemic access to the essences of different kinds of objects, and perhaps abstract vs. concrete objects in particular, could plausibly differ even radically. In fact, this would suggest that we must resort to some sort of a hybrid view after all (i.e., combining *a priori* and *a posteriori* elements). On the face of it, it is difficult to see how *a posteriori* essentialism could account for the essences of abstract objects (although perhaps there is a way to do this), so unless we can explain our epistemic access to the essences of concrete objects in terms of *a priori* essentialism as well, then a hybrid view looks unavoidable. See Tahko (2017) for discussion; we will return to this in section 3.

<sup>21</sup> The problem at hand does not concern our ability to *refer* to objects though; as Lowe (2008a: fn. 24) notes, he is not interested in semantic questions in his theory, but rather about our acquaintance with 'objects of thought.' Accordingly, I will also omit any discussion of semantic matters here.

or theoretical objects, it may be that the apparent simplicity of thinking and talking about these familiar objects is exactly due to their being so *familiar* to us. That is, one might doubt that there is a genuine difference between familiar, concrete objects and more theoretical or abstract objects. The key here is how we interpret Lowe's requirement for talking or thinking about an object *comprehendingly*. Lowe does not go into much detail about this requirement, but it appears to be doing a lot of work in his account; it is also a possible escape route from the objection under consideration, namely, that the familiarity of everyday objects is all that drives Lowe's idea that essence precedes existence. Perhaps it is just the inherited human knowledge about cats and other familiar objects that is doing the work here?<sup>22</sup> By adopting a fairly strong reading of 'comprehendingly', it could be argued that one does indeed need to know a number of things about the essence of the kind 'cat' before it is possible to think or talk about cats comprehendingly.

According to Lowe (2008a: fn. 23; see also Lowe 2013: Ch. 8), to be able to think or talk about cats comprehendingly, it may be sufficient to know that cats are animals or living organisms. This would at least rule out radical mistakes such as thinking that cats are robots. I take it that the underlying idea is as follows: someone who thinks that cats are robots or demons does not understand what it means to be a cat, that is, we would have to say that this person is not acquainted with cats (as an object of thought). Hence, such a person would not be able to pick out cats with any reliability, since they might for instance think that an actual robot is *also* a cat. A crucial element of 'comprehension' would thus appear to be a sufficient grasp of the identity and existence conditions of a given object. What constitutes a 'sufficient' grasp? We will get to this in a moment. In any case, there is always room for error, so the requirement should not be understood as the absence of any possibility to mistake one kind of

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<sup>22</sup> Thanks to David Oderberg for suggesting this line of thought.

thing for another kind of thing. An important specification of this idea concerns the relationship between general essences and categorial hierarchy – a thesis that Lowe calls ‘categorialism’ and which maintains that one necessary condition for a thinker’s ability to single out objects in thought is the thinker’s grasp of a *categorial concept* under which the thinker conceives the object to fall (Lowe 2013: 21). This grasp may be implicit. Lowe’s own example concerning Oscar, the cat, will help to illustrate the idea (Lowe 2013: 23ff.) (and we will get the answer to our question about a ‘sufficient’ grasp as well).

Let us suppose that the object of your singular thoughts is Oscar, the cat. You see Oscar and track his movements with your eyes. But suppose, for *reductio*, that you do not acknowledge categorialism and hence do not conceive Oscar to fall under any categorial concept, such as *being a cat*. Now, following the idea that statues and lumps of matter coincide, Lowe suggests that Oscar as well must coincide with a certain hunk of matter. If that’s right, then you will have presumably seen and tracked the hunk of matter as well. If you were an anti-categorialist, you would now have to explain why you would be able to have singular thoughts about *Oscar*, the cat, rather than the numerically distinct hunk of matter – which might indeed just as well be a robot, or a demon. Lowe of course insists that you cannot have genuine, *de re* singular thoughts about an object without at least an implicit grasp of the relevant categorial concept – a ‘sufficient’ grasp requires one to be able to place the entity in question under the relevant categorial concept.

The example concerning Oscar is still very crude, but Lowe does specify the case (2013: 27). Let us suppose that your neighbours talk about Oscar, saying that Oscar is white and beautiful, but never reveal that he is in fact a cat, rather than say, a vase (or a robot, or a demon...). As Lowe observes, according to the usual causal-historical theory of linguistic reference, you can refer to Oscar successfully. But Lowe protests that since Oscar could be

any kind of *thing* whatsoever, you have not really managed to express singular thoughts about Oscar: ‘thing’ and ‘object’ are *transcategorical* terms, whereas Lowe’s categoricism requires that to have genuine singular thoughts about Oscar you would at least have to grasp that Oscar is a *living being*, an animal, because that would appear to be the narrowest categorial concept that Oscar could fall under. It *might* be sufficient for one to have singular thoughts about Oscar if one thinks that Oscar is a dog – another kind of living being – but not if one thinks that Oscar is an ornament of some kind. The details of such examples will of course partly depend on one’s view of the correct categorial hierarchy, but the picture that Lowe is developing seems clear enough: to be able to think or talk about something comprehendingly, we must have grasped, at least implicitly, some subset of the relevant thing’s *criteria of identity*. So it seems that a natural reading of Lowe’s view is to take it that grasping the identity and existence conditions of an object just is grasping the essence of an object. This may put some fairly strong constraints on our ability to have *de re* singular thoughts concerning objects, but this is not the place to discuss that problem.

We now have a rough idea about Lowe’s epistemology of essence, but some questions remain. In particular, it still seems that there must be something more to essence than just the bundle of the relevant identity and existence conditions, for how are we supposed to know, *a priori*, which object a given set of such conditions is associated with? Here we once again face the unity problem. As we saw in section 2.1.1, Oderberg introduces the idea of a unifying *a priori* principle in order to establish this link, but I expressed some doubts about this move. If each object is associated with a unique unifying principle, then the unifying principle itself is starting to look very much like the essence (if not a *haecceity*), and it is not clear that this will help us to address the original epistemic problem. For Oderberg, it is the Aristotelian notion of *form* that goes towards addressing this problem, but Lowe himself does not adopt

Aristotelianhylomorphism or the form/matter distinction as it is usually applied in this tradition (see Lowe 1998).

One further worry that might be raised at this point concerns children's ability to talk about and reliably pick out, say, animals, without any deeper comprehension about the general essence of animals. Might children be able to having singular thoughts about animals without even knowing that animals are living organisms? I think that Lowe would answer negatively. As a first attempt to settle the matter, we could subject a group of young children to a test to determine whether they have grasped the essence of cats to a sufficient degree to talk and think about them comprehendingly. If they are able to pick out the cat from a sample space including a cat, a cat-like robot, and a dog, then they have at least a partial grasp of the essence of cats. However, this would surely beg the question, for what guarantees that it is grasping the essence that is doing the work here?<sup>23</sup> Lowe's requirements for grasping (a part of) an essence, it seems to me, are fairly modest. Everyone, even quite young children, is supposedly able to grasp partial essences. But something more needs to be said in support of the account to address the concerns raised above. I venture to suggest that the most promising reply available to Lowe is to introduce context as a variable in cases of 'comprehension'. In a situation where cats are the only animals about, it is sufficient to know that cats are animals to be able to think and talk about them comprehendingly, and to distinguish them from other objects. However, if there are other animals about, then more detailed information about the essence of cats would be required, such as cats being feline. Similarly, we would need to know even more about cats to distinguish them from other felines. Eventually, we might encounter difficult situations where we may not know enough about the essences (and so the relevant criteria of identity) of a combination of objects to adequately distinguish them, and

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<sup>23</sup> For relevant discussion, see also Vaidya 2010 and Horvath 2014.

‘species’ may very well be one such problematic case.

Perhaps one final example would be useful. Consider the classic case of a bronze statue and the lump of bronze that it is composed of. If the lump and the statue are indeed two different things, as Lowe (2008a: 46) thinks they are, then no amount of empirical information will help us to determine this. Empirically, the statue and the lump are indistinguishable. It is only because we know what kind of things bronze statues and lumps of bronze are – and specifically knowing what they essentially depend on for their existence and identity – that we can distinguish them. Here it may be helpful to recall Oderberg’s idea that if a removal of a certain quality that a thing has would produce a radical change in the properties, functions etc. of that thing, then we are most likely dealing with a quality that is part of the thing’s essence. We can for instance consider a change in the shape of the bronze statue and the lump of bronze: the lump could survive such a change without any radical consequences for its key properties and functions, whereas the statue could not, and hence the shape of a bronze statue is plausibly a part of its essence. In passing, Lowe seems to make reference to this type of idea, since he notes that we might be able to grasp the identity and existence conditions of entities with the help of their *causal powers* (Lowe 2013: 115). Accordingly, Lowe would likely attempt a strategy not unlike Oderberg’s in order to address the unity problem: we can determine whether an object continues to exist by observing whether its distinctive causal powers (which are grounded in its essential properties) continue to be manifested. But as we will see in the next section, this move may not be available for a pure *a priori* essentialist.

While this brief reconstruction of Lowe’s *a priori* essentialism leaves many questions open, I hope to have given a fair summary of the core ideas and some of the problems concerning the account. I will now conclude by outlining some reasons to consider a hybrid



approach to the epistemology of essence.

### 3. A Hybrid Approach?

One key problem for a unitary account of the epistemology of essence concerns the distinction between concrete and abstract objects. We discussed the prospects of Lowe's *a priori* essentialism regarding concrete objects and found some problems, although I think that Lowe's *a priori* essentialism is very plausible in the case of abstract objects, such as geometrical objects (see Lowe 2012 for a discussion of geometrical objects). As I have argued elsewhere (Tahko 2017), it is much more difficult to adapt Lowe's account for the general essences of natural kinds. I will not dwell on this issue here, but will instead focus on a passage from Lowe himself which, appropriately interpreted, may take us toward a hybrid view, despite the fact that he is typically quite explicitly in favour of *a priori* essentialism.

The passage I have in mind is the following (similar passages can be found elsewhere, e.g., Lowe 2014: 257):

The growth of objective knowledge consists [...] in a constant interplay between an *a priori* element – knowledge of essence – and an *a posteriori* element, the empirical testing of existential hypotheses whose possibility has already been anticipated *a priori*. (Lowe 2013: 156).

Lowe adds that this interplay does not have a foundational 'starting point' and it's clear that he wants the process to be a fallibilist one. He also makes it clear that the empirical element in the process is not merely perceptual evidence, but rather 'empirical evidence' as it is

understood in scientific practice. But it looks as if knowledge of essence is supposed to be contained entirely in the *a priori* element. The context of this passage is Lowe's criticism of conceptualism, i.e., the view that essentialist knowledge concerns concepts. The idea is that we can at least sometimes know *a priori* what it is to be an object of a certain kind even if no objects of that kind actually exist. Empirical evidence enters the picture when we want to determine whether any objects of that kind do in fact exist. As an example, recall the case of transuranic elements discussed in section 2.2.1.

There's much that I find appealing in Lowe's account, but I think that the mentioned interplay between the *a priori* element and the *a posteriori* element is more subtle than Lowe leads us to believe. In particular, I'm not fully convinced that we can, properly speaking, know what it is to be an object of a certain kind entirely *a priori* (see Tahko 2015a) – and this would suggest that knowledge of essence is the *result* of this interplay rather than present only in the *a priori* element. In fact, I think that there is a slight tension in Lowe's own account in this regard, for recall what was said above about the role of causal powers in this process: it seems that in order to address the unity problem, Lowe has to resort to a strategy familiar from Oderberg, namely, to insist that we can determine the identity and existence conditions of objects (at least partly), by observing whether the object's distinctive causal powers (which are grounded in its essential properties) continue to be manifested (Lowe 2013: 115). Now, it should be plain to see that if we must refer to the causal powers of objects in order to gain epistemic access to their essential properties (in which these causal powers are grounded), then we must at least sometimes rely on empirical evidence to accurately determine what it is to be an object of a certain kind. We may, of course, rely on previous empirical information when we speculate what kind of causal powers objects of a certain kind (such as some yet to be synthesized transuranic elements) might have, but how could we know that these causal

powers arise from the essential properties of the very object that we had in mind? Only by rigorous empirical testing, it seems to me: we may have in mind several candidate objects that have very similar causal powers, but empirical testing will help us to single out which of these candidate objects we are in fact dealing with. This is how we can determine the existence and identity conditions of that object more accurately. Note that there is still room for an *a priori* element here, for in order to get this process started (even if there is no foundational ‘starting point’, as Lowe claims), we must indeed have at least some *a priori* knowledge about what kinds of objects are metaphysically possible. This is especially striking in the case of transuranic elements, since many of them can only be created by our particle accelerators or by supernovae, but we have nevertheless been able to determine many of their essential properties prior to empirical evidence. For Lowe, this is a crucial aspect of the relationship between metaphysics and natural science.<sup>24</sup>

To conclude, it seems that Lowe has given us an intriguing picture of the role of *a priori* knowledge in the epistemology of essence, but this picture does need to be completed with the help of empirical elements. If this is right, then it would be a mistake to describe Lowe’s account as purely rationalist, even in the sense that we first grasp the essences of possible entities *a priori* and then proceed to determine which ones of them actually exist with the help of empirical evidence. Instead, we can see that Lowe’s account assumes a subtle interplay of *a priori* and *a posteriori* elements, which may, properly interpreted, come close to a type of hybrid view about the epistemology of essence.<sup>25</sup>

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<sup>24</sup> For more details about this aspect of Lowe’s work, see Lowe 2011b. For discussion, see Morganti and Tahko forthcoming.

<sup>25</sup> I’d like to thank Ramiro Caro, Jonah Goldwater, Kathrin Koslicki, Laurie Paul, and David Oderberg for helpful comments on earlier versions of this article.

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